REFERENCES: Lister, *Manufacturing Processes of Wool and Worsted* (K 13955, Chicago Public Library catalogue); McLaren, *Spinning Wool and Worsted* (K 6058); "Origin and Ancient History of Sheep," *Pastoral Life and Manufacture of the Ancients* (K 6021); Ashenhurst, *Design in Textile Fabrics* (K 6025); Lord, *Decorative and Fancy Textiles* (with designs and illustration) (K 13946).

Number.— Such as is required in the making of a freight car. In connection with geography, after the visit to the Rock Island Railroad yards, each child will make a freight car in woods, casting wheels of lead. This will require both linear and cubic measure.

Science work demands : (1) area of one square foot; (2) volume — 12 cubic inches, seen in various shapes, as 12 × 12 × 1, or 12 × 6 × 2, etc.

Number in history: Plan rug or carpet to fit floor; make design accurately.

Music.— Eleanor Smith, "Spin, Lassie, Spin" and "Rain Coach," *Songs for Little Children*, Part II ; Gilchrist, "Rippling, Purling Little Brooklet," in Tomlin's *Children's Songs and How to Sing Them;* Eleanor Smith, "Wind Song;" Reinecke, "Fair Snow White;" Taubert, "The Postilion," "Modern Music" series, Book I ; Eleanor Smith, "The Sap has Begun to Flow," *Songs for Little Children*, Part II.

SECOND GRADE.

Clara Isabell Mitchell.

REVIEW OF LESSONS IN ARITHMETIC.

I. *The thermometer.*— Is today colder or warmer than yesterday? How much ? How do we measure heat ? How does the thermometer measure heat ? Who can read what it registers today?

All take thermometers. Find the figure 1 on your thermometer. Find the figure 0. Starting at the bulb where the mercury is, show with your finger how far the mercury rises when there is one degree of heat to measure. Begin at the bulb again and show how high it rises to register 10°, 20°, 30°, 40°.

To what point has it risen today? (Between 30° and 40°.)

How many spaces are there between the marks 30° and 40°? "Five." Draw on the blackboard that part of the thermometer which is between 30° and 40°, divided into five spaces. How many degrees between 30 and 40 ? "Ten." How many spaces? "Five." Then how many degrees must each space stand for? "Two." Count and see. Count by twos: "Two, four, six, eight, ten." Call the first space 32°, the second 34°; and so on.

Now read the temperature today: "34°." How is the thermometer marked, beginning at 0 ? "0, 10, 20, 30, 40, 50, 60," and so on, to 220.

You have been counting by tens. This is the way they are written :

$10 \times 2 = 20$ These statements mean: 2 tens are 20; 3 tens are 30; 4
$10 \times 3 = 30$ tens are 40; and so on. Read them in that way. Write them
$10 \times 4 = 40$ in your number books.
$10 \times 5 = 50$ How did we count by twos? We will all write the state-
$10 \times 6 = 60$ ments for counting by twos and keep them in our books.
$10 \times 7 = 70$ Materials used: thermometers; pans of water, heated to
$10 \times 8 = 80$ different degrees of temperature; ice and snow.
$10 \times 9 = 90$ The children guessed at the temperature of each of the
$10 \times 10 = 100$ pans of ice, snow, and water, and then tested with thermome-
ter. The melting point was found to be about 34° F., and the children were
told that 32° F. is regarded as the fixed point on the thermometer for indi-
cating the freezing temperature.

A beaker full of snow was placed over a lighted lamp and tested con-
stantly by feeling and by the thermometer. During the course of the heat-
ing the rise of the mercury was recorded in figures all the way from 34° to
214°.

At the end of this experiment each child wrote his report of the week,
as: Freezing point is 32° F. Boiling point is 212° F. We keep our house
at 70° F.

II. *Lesson in measurements* (used in the making of lemonade).— The les-
son opened by the children's reading the following sentences as they were
rapidly written upon the blackboard by the teacher:

"I suppose you all know that somebody's birthday is almost here. Shall
we have a party? Shall we invite people and give them something to eat
and something to drink? You say, 'A birthday cake,' and here is a surprise
for you. The eighth-grade children knew we were to have a birthday and
have made the cake for us. Yes, the candles are ready, eight of them.

"What shall we have to drink? It must be something that everybody
likes, and that we can make. Lemonade? Whom shall we invite to our
party? The kindergarten children."

In estimating the quantities of materials required, the children counted
and found that there were five second-grade children and thirteen kinder-
gartners, and decided that each should have 1 glass of lemonade, making
18 glasses.

The teacher wrote $13 + 5 = 18$, which the children read: "Thirteen plus
five are eighteen."

Allowing 6 glasses for visitors, how much lemonade shall we make?
$13 + 5 + 6 = 24$; or, $18 + 6 = 24$.

How many quarts of water do we need?

The children who could not answer were asked to tell what they knew
about a quart. They said: "There are 2 pints in 1 quart."

What do you know makes a pint? "Two cups make a pint."

These two statements were written by the teacher and read by the chil-
dren.

Then, I quart will make how many cups or glasses ? "Four." How many quarts will be needed to make 24 glasses ? Those children who were slow in imaging this problem were told to make marks on the blackboard to represent the 24 glasses. They were then told to mark off the number of glasses which would be filled by I quart of water: "Four." Another quart : "Four more ;" and so on.

Write " I quart " over each lot of glasses that could be filled by I quart.

How many quarts are needed to make 24 glasses ? "Six." How many fours in 24 ? "Six."

Count by fours to 24.

The table of fours, up to 24, was written on the blackboard by the teacher, and read and memorized by the children.

RULE FOR MAKING ONE GLASS OF LEMONADE.

½ lemon and ⅙ of an orange squeezed and strained.

¼ cup of sugar.

⅛ of a banana cut in thin slices.

2 cherries.

How many lemons will be needed for 24 glasses? "Twelve." How many oranges? "Four." How much sugar? "Six cups." How many bananas? "Three."

Statements written were :

24 halves = 12.   24 quarters = 6.

24 sixths = 4.   24 eighths = 3.

The lemonade must be made in two large bowls. What part of all the material must go into each bowl ? " One-half—3 quarts of water ; 6 lemons ; 2 oranges ; 3 cups of sugar ; 1 ½ bananas ; 24 cherries."

½ of 6 = 3.   ½ of 4 = 2.

½ of 12 = 6.   ½ of 6 = 3.

½ of 3 = 1 ½.   ½ of 48 = 24.

OUTLINE FOR MARCH AND APRIL.

The leading activities of the second grade during March and April will be : (1) gardening, (2) modeling, (3) weaving and needle-work.

1. *Gardening.*— Making of hotbed and planting of such seeds as children may choose. Examination of soils. Preparation and planting of flower and vegetable gardens.

2. *Modeling.*—Studies of leaf buds and germinating seeds as records of development.

3. *Sewing* of original designs on blotters and book covers.

The lessons correlated with this handwork will include the

subjects in : (1) nature study, (2) history, (3) geography, (4) literature, (5) music, (6) arithmetic,

1. *Nature study.*—Collection and examination of buds from the oak, maple, willow, elm, ash-leaf maple, cottonwood, birch, hickory, horse-chestnut, and lilac. Modeling, drawing, painting, and writing as record of development. Parallel record of changes in temperature, wind, clouds, rain, snow, and frost. Continued study of soils as begun in October (see October number). Excursions to swamp at Seventy-ninth street, lakeshore, to Puringon, and to a truck farm, for study and collection of soils. Planting of seeds in hotbed, window-box, sand-box, and on netting over water ; record of changes.

2. *History.*— Methods of agriculture among some primitive peoples: Aztec and Iroquois Indians ; Lake-Dwellers of Switzerland. Ancient Egyptian agriculture as pictured on the walls of tombs. Comparison of primitive and modern implements to be seen in Field Museum. Excursion to McCormick Reaper Works.

3. *Geography.*—Stories, pictures, and stereopticon views of the wheat, corn, sugar, and rice fields of America and Cuba ; of the rice and tea farms of China ; of the wheat fields of Russia ; of fruit-growing in the West Indies, South America, California, Florida, East Indies, Hawaii ; of the coffee fields of Arabia and Brazil ; of agriculture in Egypt. Excursion to botanical garden to see tropical vegetation. Comparison of temperature in the palm gardens with that of our climate. Excursion to South Water street to see variety of fruits and vegetables brought into our city. Methods of transporting foods from sources into Chicago : caravan, wagon, railroad train, steam and sailing freight boats. Principal routes of travel — railroads, lake, and river.

4. *Literature.*— Review of the story of Joseph ; "Hiawatha Fasting ; " story of "The Sleeping Beauty," as a spring myth ; the Montezuma myth ; "The Wind" and "Windy Nights," by Stevenson ; "The Wind and the Moon," by MacDonald ; " The Wind in a Frolic."

5. *Music.*—(See first grade.)

6. *Arithmetic.*— Measuring, weighing, and comparing the constituent elements in 100 grams of each of the different kinds of soil. Adding account of garden expenses. Finding differences in temperatures of climates represented by the foods which come into Chicago. Special emphasis on the subject of subtraction ; teaching of the process commonly known as "borrowing." Writing of tables (multiplication, weights, measures) as they are needed. Recording in the "number books" made and kept by each child.

Reading, writing, speech, and drawing and painting will be used as means of study or expression.

1. *Reading.*—Written and printed stories of agricultural life. Stories of

the food-growing industries of other countries. The poems and stories under "Literature." Directions for work.

2. *Oral reading.*—"The Wind," "Windy Nights," "The Wind and the Moon," "The Wind in a Frolic," to be used as drill in oral reading and speech. Dramatization of the story of "The Sleeping Beauty."

3. *Writing.*— Records of observations made in nature-study lessons. Letters to parents or absent children. Stories to read or tell to others. Lists of words necessary to the writing of stories and records.

4. *Drawing and painting.*— Illustration of stories and subjects of all interesting or suggestive lessons. Designs for blotters; designs for covers of the record books. Leaf, bud, twig, and seed forms will be given as subjects for the designs.

THIRD GRADE.

GUDRUN THORNE-THOMSEN.

REVIEW FOR JANUARY.

French (Lorley A. Ashléman).— The books containing the illustrated "Ronds et Chansons" arrived from Paris in January. The class was given "Sur le pont d'Avignon" for oral reading. The children were delighted to find that they could both read and understand a whole French book.

The greater part of the French work for January centered around the luncheon period. While serving, the pupils spoke only French. This gave rise to the use of the following sentences, which were written several times on the blackboard for the children and then written by the children themselves when sent to the board by each other :

Le quatrième grade est servi.

Voulez-vous une tasse de lait ?

Voulez-vous une tasse de soupe ?

Voulez-vous une tasse de potage aux tomates ?

Voulez-vous une tasse de potage au purée de pommes de terre ?

Voilà !

Je vous remercie.

Il n'y a pas de quoi.

Donnez-moi du sucre, s'il vous plaît.

Passez-moi un verre d'eau.

Passez-moi une cuiller.

Qu'est-ce que c'est que ça, mademoiselle? (here the child held up the article in question).

Le pain, le biscuit, le gâteau, le petit gâteau, la tartine, la tarte, la comfiture, la gelée, le beurre, le pâté, la pomme, la poire, la banane, la figue, l'orange, les noix, l'abricot, l'olive, le cornichon, la viande froide, le jambon.